

Patent Claims

1. Functional paste comprising a metal powder, an etching agent, a binder and an organic solvent.
- 5 2. Functional paste according to claim 1, comprising a diluent.
3. Functional paste according to claim 2 wherein the diluent is butylcarbitol.
- 10 4. Functional paste according to any one of claims 1 to 3, wherein the etching agent has removal activity of oxidation layers on the surface of the metal powders.
5. Functional paste according to any one of claims 1 to 4, wherein the etching agent has etching activity for antireflection layers of solar cells.
- 15 6. Functional paste according to any one of claims 1 to 5, wherein the etching agent has removal activity of oxidation layers and/or nitride layers of Si.
- 20 7. Functional paste according to any one of claims 1 to 6, wherein the etching agent is  $\text{NH}_4\text{HF}_2$  or  $\text{NH}_4\text{F}$ .
8. Functional paste according to any one of claims 1 to 7, wherein the metal powder is one or more powder selected from the group consisting of Ag-coated Ni powder, Cu powder, Ag powder, Au powder and Pd powder.
- 25 9. Functional paste according to any one of claims 1 to 8, wherein the binder contains a thermosetting resin.
10. Functional paste according to claim 9, wherein the thermosetting resin is an epoxy resin and/or phenol resin.
- 30 11. Functional paste according to any one of claims 1 to 10, wherein the organic solvent is polyhydric alcohol or its mixture.
- 35 12. Functional paste according to claim 11, wherein the polyhydric alcohol is glycerin and/or ethylene glycol.

13. A solar cell comprising a semiconductor layer, an antireflection layer above the semiconductor layer, and a surface electrode which penetrates through the antireflection layer to bring the semiconductor layer into conduction, wherein the solar cell is fabricated by coating and baking the functional paste comprising a metal powder, an etching agent having etching activity for antireflection layers, a binder and an organic solvent, on the antireflection layer in a desired electrode shape.
14. An electric circuit formed by coating and baking the functional paste comprising a metal powder, an etching agent having removal activity of oxidation layers on the surface of the metal powders, a binder and an organic solvent, on a substrate in a desired pattern.
15. A method of fabricating a solar cell comprising a semiconductor layer, an antireflection layer above the semiconductor layer, and a surface electrode which penetrates through the antireflection layer to bring the semiconductor layer into conduction, wherein the method comprises coating and baking the functional paste comprising a metal powder, an etching agent having etching activity for antireflection layers, a binder and an organic solvent, on the antireflection layer in a desired electrode shape.
16. A method of forming electric circuits, which comprises coating and baking the functional paste comprising a metal powder, an etching agent having removal activity of oxidation layers on the surface of the metal powders, a binder and an organic solvent, on a substrate in a desired pattern.